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Evolution, disruption and continuity – the early years of the Ulm School of Design

The Hochschule für Gestaltung Ulm was a pioneering design school and a place of controversy. A constellation that seems hardly accidental, but rather a necessity. After all, if it is agreed to leave old paths behind, it is far from clear in which direction to continue. A life without controversy, without discussion, can be lived at a university in which all participants have made themselves comfortable in the *status quo*. This was not the case in Ulm: the question of what design is and how design should be taught was intensively discussed, especially in the early years of the HfG.

Despite all differences of opinion and change of direction, there was also a great continuity that constitutes the inner core of the Ulm School: design as a socially effective discipline and, following this, responsible designers. Design embedded in science and technology, and above all, the unyielding adherence to the idea of a rational and thus comprehensible design process.

In the first years, what was especially discussed was the legacy of the Bauhaus, which the Ulm School explicitly wanted to succeed at the beginning. The question of which parts of the Bauhaus program were still up-to-date was controversial¹. No surprise, more than two decades and a World War later. In the discussion about the Bauhaus legacy, the great topic of Ulm was already laid out: the relationship between science and design.² The school diverged from the artistic working methods of the Bauhaus to increasingly science-driven methods³. A development that led, in 1956, to the resignation of Max Bill (1908-1994,

Switzerland), Ulm's first rector who had represented the Bauhaus legacy and the idea of "good design" not only symbolically.

A new school

Strictly speaking, the first conflict began already before the foundation of the school, at the stage of its planning. The founders, Inge Scholl (1917-1998, Germany), Otl Aicher (1922-1991, Germany) and Max Bill agreed on one thing: it should become a holistically oriented, non-university faculty.⁴ The original idea of Inge Scholl and Otl Aicher was to build the school around the core theme of political education and method. A few years after Hitler's fascism and World War II, the founders' goal was to form a new democratic elite. Science, technology, design and architecture were intended as a complement to this political goal as part of a holistic education. Like the two Germans Aicher and Scholl, the Swiss Max Bill had been a determined opponent of the Nazis.⁵ Nevertheless, he took a different approach to the question of the school's primary orientation. In this new school, Bill did not want to see politics, but design at the center — at the center of the curricula and at the center of power. Aicher and Scholl made this first major change only out of necessity. The prominent artist Max Bill was too crucial for the realization of this school project to lose him due to this dissent.⁶ Instead of a political school that also integrates design, Ulm became a design school with sociopolitical aspirations.

1 Maldonado, Tomás. "Is the Bauhaus Relevant Today?". In: *ulm* 08/09, 1963.

2 After Bill's departure, more and more scientific methods migrated into the classroom. Some lecturers, especially the mathematician Horst Rittel, worked towards a scientification of the entire design process and students increasingly complained about formalistic exercises whose practical relevance they doubted. Other academic lecturers, too, considered design practice, whose decisions are never completely logically derivable, to be less valuable than "clean" theory. Interestingly, the same lecturers who had fought for a greater role for the sciences were those who opposed the attempt at an absolute scientification of design in the early 1960s: Aicher and Maldonado, meanwhile supported by Gui Bonsiepe, took the view that design could never completely merge into science. Cf. Maldonado, Tomás; Bonsiepe, Gui. "Science and Design". *ulm* 10/11, 1964.

3 It would be wrong to classify the Bauhaus as artistic and non-scientific. At the Bauhaus too there was a development from the esoteric handicrafts romanticism of the founding years (cf. Wagner, Christoph (ed.) *Esoterik am Bauhaus*, 2009) to a greater technical orientation and to a strong social and scientific orientation. The latter, however, only under the brief directorship of Hannes Meyer from 1928 to 1929, to which Maldonado explicitly referred in

"Is the Bauhaus Relevant Today?" Cf. Oswald, Philipp (ed.), *Hannes Meyers neue Bauhauslehre – Von Dessau nach Mexiko*, 2019.

4 The rejection did not refer to the university level, but above all to the strong disciplinary separation, the devaluation of application and praxis, and the university teaching and learning methods.

5 Inge Scholl was the sister of Hans and Sophie Scholl, who were executed in 1943 as resistance fighters of the "White Rose". At that time Inge Scholl was in a leading position for the girls' organization of the Nazis. When exactly she turned into an anti-fascist is still controversial today. Cf. Zankel, Sönke. *Mit Flugblättern gegen Hitler: Der Widerstandskreis um Hans Scholl und Alexander Schmorell*, 2008. Max Bill already worked in the 1930s for the anti-fascist period magazine *information – wirtschaft, wissenschaft, erziehung, technik* which was published in Switzerland by Ignazio Silone, an Italian who had fled from Mussolini.

6 Wachsmann, Christiane; Oswald, David "Writing as a Design Discipline – The Information Department of the Ulm School of Design and its Impact on the School and Beyond". In: *AIS / Design. History and Research*, No. 6, December 2015.

Max Bill and the "Good Design"

After two years of study at the Bauhaus in Dessau, Max Bill joined the Schweizerischen Werkbund⁷. Among other things, the Werkbund aimed to teach the general public an understanding of "good design". In the 1950s, Werkbund members traveled Germany with sample cases full of exemplarily designed everyday products in order to propagate material-appropriate, functional, durable and "honest" design — in contrast to industrially produced kitsch, cheap material imitations, and so-called "decor defects". At the same time, Max Bill helped popularize the concept and notion of "Good Design" in Switzerland through exhibitions and publications.⁸

Looking at the missionary work of the Werkbund of that time with today's knowledge, one wonders how dogmatically and apodictically argued it was. With clean conscience, normative judgments were made and questions of design were explicitly raised to questions of morality. According to them, it was a matter of decency to buy products of "Good Design". At the same time, it is striking how deeply many of these beliefs are still inscribed in the collective memory of the design discipline today: simplicity as an ever-present goal, complexity as an opponent, ornament as a "crime" and the great myth of "material veracity". The latter did not only refer to objectively existing physical properties of the materials, but also culturally conditioned characterizations, or ascribed traits based on esoteric theories, in the sense of a supposed material's essence.

The basic year at the Ulm School

In 1953, the teaching activities of the school began with a basic course modelled after the preliminary course of the Bauhaus. Four former Bauhaus teachers taught in Ulm: Josef Albers, Johannes Itten, Walter Peterhans and Helene Nonné-Schmidt. As at the Bauhaus, the students of all departments went through the same program, regardless of whether they wanted to study product design, visual communication or architecture ("building"). Just as at the Bauhaus, the learning objective was "learning to see" and to develop personal creative potential in order to "work impartially and independently".⁹

The first year of the newly founded School began with a course by Walter Peterhans, who had taught at the Bauhaus in Dessau. In his courses, he could literally spend hours discussing a single black line — what its effects are and how it fits in the paper format. The exercises were characterized by countless iterations and absolute precision, both in terms of the

craftsmanship and the design effect. One single line on a large white cardboard was worked on for a week. Peterhans' had developed this course in Chicago at New Bauhaus successor. Mies van der Rohe described its effect as "a change of the whole mental attitude of the students. All fussiness and sloppiness disappeared from their work".¹⁰ Peterhans' confrontations upon proportions, shapes, colors, textures, and spaces were strictly without any application context, without symbolic or iconic reference, and without a "meaning". This insignificance, the restriction to the most elementary means of the visual, had Peterhans' methods in common with concrete art — even if Peterhans was neither a concrete artist nor had the goal of training such.

Max Bill, and later Tomás Maldonado (1922-2018, Argentina) in particular, introduced another aspect of concrete art into Ulm's basic teaching: the relationship to mathematics. The intention behind the mathematically driven approaches was to foster explainability, systematics, rule orientation and objectivity. Not only geometry and topology were applied to structures and bodies, the exercises were also enriched by further mathematical-algorithmic concepts such as Sierpinski triangles, Peano surfaces, symmetry operations, reflections, projections, translations etc. However, the perceptual-psychological, phenomenological aspects were not replaced by the rigid mathematical methods. Maldonado as well provided numerous exercises that train vision, for example by exploring the limits of perception of inaccuracies (exercise "inexact by exact") or if some black squares are to be embedded in abstract, multi-colored mosaics in such a way that they are not perceived as holes, but as equal color (exercise "black as a color").¹¹ But even these exercises should not result in individual-personal solutions. They were in the tradition of Joseph Albers, who had already released the preliminary course at the Bauhaus from Itten's "holistic-transcendental" theories.¹² Even Maldonado's non-mathematical design exercises that focussed on perception, also referred to scientific theories of perception such as Gestalt laws, or they construed the design with sign theory and semiotic explanatory models. Max Bill, who also taught the basics, stood between these two cultures, or in other words: he connected them. He felt at home both in the Bauhaus-influenced artistic perception training as well as in the mathematics-inspired design logic of Concrete Art.

When Tomás Maldonado moved from Buenos Aires to Ulm in 1954 he also was a genuine concrete artist, albeit with a great penchant for the sciences, theory and theory formation. Unlike

7 The "Werkbund" is an association of artists, architects, and industrialists founded in 1907 in Germany. It was strongly influenced by the Arts & Crafts movement and acted as what today would be called a lobby organization for contemporary design.

8 Erni, Peter. *Die Gute Form – Eine Aktion des Schweizerischen Werkbundes*. LIT Lars Müller, 1983.

9 "Hochschule für Gestaltung Ulm Lehrplan", typewritten script, HfG-Archiv Ulm, 1953.

10 Cf. Wachsmann, Christiane; Albers, Ingela. *Bauhäuser in Ulm – Grundlehre an der HfG 1953-1955*. Ulm: HfG-Archiv Ulm, 1993.

11 Lindinger, Herbert (ed.) *Ulm Design – The Morality of Objects*. Cambridge: The MIT Press, 1991.

12 On the one hand, Itten has great merits, e.g., in the popularization of a systematic color theory. On the other hand, throughout his life he has searched for theories that connect all and explain, not only color phenomena, but also music, health, and the whole cosmos in a holistic world formula. An example from Itten's book *Die Kunst der Farbe* [The Art of Color] from 1970: "If two colors are mixed together, the interpretation of the resulting mixed color must correspond to the interpretations of the original colors. (...) Yellow and blue make green = knowledge and faith make compassion". Such an unequivocal assignment of colors to meanings today would be considered far too simplistic even within a reasonably homogeneous cultural space.

Bill, he was not an experienced designer of everyday products. However, Maldonado quickly outgrew Bill. Not by becoming the better product designer, but in his determined orientation towards the new professional profile of the industrial designer. Designers should not be artistic-ingenious know-it-alls, who draw their skills from personal experience, firm principles and intuition, but part of a team of experts who work as scientifically informed as possible. A canonical-moral division into "good designs", and conversely also into "bad designs", is naturally alien to such an approach. No wonder there were conflicts in Ulm.

Otl Aicher – design between democratization and dogmatism

Otl Aicher took the side of the innovators in this conflict, who increasingly wanted to distance themselves from the Bauhaus. Aicher had attended the courses of the old Bauhausers himself in the first year after the school's opening. Although he was the initiator and co-founder of the school, he was far from being a respected experienced designer at the time. However, Aicher learned quickly and soon took on lessons in the basic course himself.

Of all Ulm's lecturers, Aicher is the one who later dissociated himself most radically from art — to the point of insulting polemics against all art and "the artists".¹³ At the same time, Aicher advocated numerous dogmatic design principles and had a good portion of skepticism towards empirically acquired knowledge — especially if they could question his views.¹⁴ A portion of Aicher's design principles can be explained rationally. These are based on the physiology of perception, e.g. the better legibility of left-aligned sentences and the rejection of justified and upper-case text.¹⁵ On the other hand, the condemnation of mixed cased text¹⁵ and the Bauhaus' peculiarity of writing everything in lowercase were derived from a theoretical superstructure that, although argumentatively understandable, is in the end more an expression of an attitude than a service to the reader. Aicher's thought is indeed likable: Not to write people and things in capital letters, but activities, thus the verbs. Just because this differed too much from the usual, Aicher remained to write everything in lowercase.

Aicher also rejected centered texts and capital letters not only for legibility reasons. Because these forms were common in times of feudalism, for Aicher they were also contaminated with an authoritarian attitude and therefore should be rejected. It is well known that Aicher used all rainbow colors for the corporate design of the 1972 Olympic Games — except red, in order to differ as clearly as possible from the Olympics in Nazi Germany in 1936. Moreover, for him red was the color of dictatorships, which he avoided throughout his career whenever possible. "Red equals totalitarianism": this is not wrong historically, but in its absoluteness also just not right. Red is also the color of the fire brigade and tomatoes.

More exciting than deconstructing Aicher's other beliefs, however, is the underlying question of the social impact of design: Does the observance or non-observance of such design rules really affect the receivers of these visual codes in a socio-political sense?

Design and Society

All major European design movements — Arts & Crafts, De Stijl, the Werkbund, the Bauhaus, the Ulm School — postulated a relationship of cause and effect between design and society. They linked the question of how we shape our material world, our things, with the question of how we want to live and in what kind of society. They were convinced that with "good design" not only the design is good, but also that it has a positive effect on society. This idea can be dismantled into four overlapping theses:

1. *The design expresses the attitude of the designers. The designed artifact embodies this attitude.*

This connection should be uncontested, even if some designers are not aware of how their beliefs and attitudes bias their designs. Just compare two iconic everyday products designed at the Bauhaus and the HfG Ulm: Marianne Brandt's silver tea pot (designed in 1924), and Nick Roericht's tea pot from his TC100 series (designed in 1959). Except for the same basic functionality — storing and pouring tea — these two products hardly share any design attributes. Brandt's tea pot is strictly modelled on basic geometric shapes: circles, squares and triangles.¹⁶ This approach, where formal "purity" takes precedence over handling aspects like the tea pouring behavior, is exactly oppositional to Roericht's. But the first major difference in their attitudes is their decision on a use context and a target audience. Roericht decides to design for professional caterers and he derives his design requirements from analysing their use processes. His design is harmonious but it deliberately neglects elegance. As a part of a formally consistent modular system, it is optimized for robustness, cleanability, low space consumption, and stackability.

2. *The artifact then acts on the users in the sense of this attitude, it changes them or their behavior.*

Although there are many cases in which the effect of things on users is evident, it is not self-evident that this mode of action would be generalizable. There are some weighty advocates of this theory: Friedrich Nietzsche ("Our writing tools take part in the forming of our thoughts."), Marshall McLuhan ("We shape our tools, and thereafter our tools shape us."), Bruno Latour (things as "actors"). In the classical-modern architecture, large glass surfaces stood for transparency and openness. Not only physically, but also symbolically in the sense of an open, democratic society.

13 Aicher, Otl. "the signature". In: Aicher, Otl. *the world as design*, Berlin: Ernst & Sohn, 1994.

14 For a long time Aicher refused to acknowledge that serif fonts are more legible than modern sans serif fonts — even if studies proved this experimentally.

15 The default use of uppercase and lowercase letters in German spelling.

16 Handle, lid, and body are based on perfect geometric circles, the pedestal is based on a square, and the triangle can be found in the spout: its axis describes a perfect angle of 45°.

That sounds plausible at first. However, today large floor-to-ceiling windows are hardly an indicator of the democratic-progressive attitude of the architect or residents. Rather for wealth. The purported mechanism by which people become more democratic through the use of such buildings also seems questionable.¹⁷ At the same time, it is generally accepted that, for example, chair-table arrangements affect group and work processes. In this case, the layout is first of all an expression of power relations. Just compare the standard layouts of a courtroom with the circle of chairs of a support group. These layouts are not only an *expression* of an attitude or a will, they also make an *impression*. A hierarchical layout — the judge's chair in front, in the middle, elevated — induces a different behavior than the same and therefore equal seating at a round table.

Taking up the tea pot discussion: Obviously not only the design criteria, but also the social functions of the two tea pots differ. When the TC100 series was used in its originally intended context, for instance in a canteen, it was hardly apt to impress the customers, in view of its deliberate expressionlessness. The Bauhaus model in contrast not only is a sign of wealth,¹⁸ it also distinguishes the owners with a cultural surplus that comes with pieces of fine art and connects them to art history. The fact that the possession of a TC100 set today may also be associated with design connoisseurship and therefore may increase the status of the proud owner, this is yet another story.

3. *The society, the political and the economic system influence design or even determine it.*

This fact is often regretted,¹⁹ but hardly doubted. Especially with the example of the Ulm School of Design, one can see how the transition from a post-war economy of scarcity at the beginning of the 1950s to an economy of oversaturated markets at the end of the 1960s leads to paradigms of design being questioned. Even companies like Braun, who had been the principle evangelist of Ulm's ascetic aesthetics, have diversified their product palette since the 1970s. When Hans Gugelot co-designed Braun's electric shaver sixtant SM3 in 1962, he was convinced that a future design modification would only be necessary as part of a big technology change. Apart from that, its design was considered a perfect and therefore timeless translation of the function "shave" into form. Today, Braun offers not only one shaver with the one perfect design but eleven. Technically they mostly differ only marginally. Including the color variants they add up to 28. A lot of the design logic follows the concept of selling rather than utility, usability, and longevity.

In Ulm, of course, the opinion that design should adapt to the irrationalities of overproduction and consumerism did not prevail. For example, through functionally unnecessary product differentiation and a focus on symbolic and emotional values such as image and status, which would replace utility, longevity and usability as goals. On the contrary, a large part of the people of Ulm were convinced that their conception of design was quite correct, but that the economic world around it was wrong. Hence, it is only logical that the economic system should change and not the design discipline. With today's knowledge, this can easily be dismissed as a naive thought. We have seen how the world has changed since the 1970s and which is stronger, the power of the economic system or the power of design: It's the economy, stupid!

4. *The designed systems and artifacts, the material world, influence human beings, and consequently the society and the political system.*

So design changes the world for the better? That depends a lot on how you define "change for the better" — and of course, how to define "design". If you mean a long-term positive effect for *all* people, society and nature, this is unfortunately rarely true. There remains the sobering recognition that the notion of design as the great problem solver is not entirely wrong, but is also far from being right, given how design acts within the contemporary capitalist economy. Yes, design changes the world and it also shapes people's actions. However, since design never acts alone and usually works within existing systems, its disruptive power is limited. That design can contribute to the improvement of the world is uncontested; that it is the *crucial* contribution to its rescue is unlikely. Designers who believe this have not yet said goodbye to the artistic megalomania of the Bauhaus Manifesto of 1919.²⁰

Nevertheless, there is nothing against and much in favor of contributing as much as we can as designers. If anything at the Ulm School is still relevant today, it is this attitude.

17 The most extreme example of this is probably Fritz Ertl, who studied at the Bauhaus in Dessau from 1928 to 1931 and became vice site manager of the Auschwitz concentration camp. Cf. Seeger, Adina. "Fritz Ertl – Bauhaus-schüler und Baumeister im KZ Auschwitz-Birkenau". In: Oswald, Philipp (ed.), Hannes Meyers neue Bauhauslehre – Von Dessau nach Mexico, 2019.

18 Marianne Brandt's tea pot is still available today. In the merchandising shop of the Bauhaus Archive in Berlin, at about 10.000 US dollars (October 2021).

19 With statements like "Actually design should not only be sales promotion and image work." or "Actually designers are the lawyers of users and the environment". The catch is the "actually" — because a sober look at the real existing design practice rather proves the opposite.

20 As an exemplary quote: "The artist is an augmented artisan. The merci of heaven allows art to blossom from the work of his hand unconsciously, in rare moments of illumination, which are beyond man's will" Gropius, Walter. Bauhaus Manifesto, 1919.